Other localities.—Florida: Haw Creek, Hubbard and Schwarz; Fort Myers, Van Duzee, May 3–5, 1908, from H. F. Wickham collection; one specimen from Florida from the Charles Schaeffer collection. *Georgia:* Tifton, P. A. Glick; Thomasville, April 1926, on pecan leaf, T. L. Bissell. *South Carolina:* Allendale, August 15, 1935, J. N. Todd.

Remarks.—In my revision of the beetles of the genus *Oedionychis* published in 1927[3] I referred to a pair of these beetles as possibly new. At that time I did not dissect any of the beetles. Dissection proves that this is quite distinct from *Oedionychus petauristus* Fabricius. The markings are somewhat similar, but the median vitta in the former species is located nearer the margin and the lateral vitta becomes a submarginal vitta. The aedeagus is quite different, being bilobed at the apex instead of being acuminate. Moreover the deep groove of punctures on the elytra is unlike anything in *O. petauristus*. Five more specimens have accumulated in the last quarter century since my first publication, all from the southeastern United States.

[3] Proc. U. S. Nat. Mus. **70** (art. 23): 24, 1927.

HERPETOLOGY.—*On a collection of amphibians from Mount Kina Balu, North Borneo.* Robert F. Inger, Chicago Natural History Museum. (Communicated by Doris M. Cochran.)

In 1951 a field party led by Lt. Col. Robert Traub, United States Army, spent approximately one month on Mount Kina Balu, North Borneo. Although not the primary desiderata, cold-blooded vertebrates were collected. Amphibians were obtained at the following localities on the mountain: Bundu Tuhan, 4,500 feet; Lumu Lumu, 5,500 feet; and Kamaranga, 7,800 feet. All the material is on deposit in the United States National Museum.

In his paper summarizing the herpetology of Mount Kina Balu, Smith (Bull. Raffles Mus. **5:** 8–32, 2 pls., 3 text figs. 1931) lists 39 species of anurans. The Traub party collected 15 species, including one new species and two not recorded previously from the mountain. In the collection list that follows, the starred forms are new to the fauna:

Megophrys monticola nasuta (Schlegel): 4,500 feet.
Megophrys baluensis (Boulenger): 4,500 feet, 5,500 feet.
Megophrys hasselti (Tschudi): 4,500 feet, 5,500 feet.
Pelophryne misera (Mocquard): 7,800 feet.
Kalophrynus pleurostigma Tschudi: 4,500 feet.
Ooeidozyga baluensis (Boulenger): 4,500 feet.
Rana kuhli Duméril and Bibron: 4,500 feet.
Rana microdisca palavanensis Boulenger: 4,500 feet.
Rana luctuosa (Peters): 4,500 feet.
Staurois whiteheadi (Boulenger): 4,500 feet.
**Rhacophorus baluensis*, n. sp.: 4,500 feet.
Rhacophorus leucomystax (Gravenhorst): 4,500 feet.
Rhacophorus spiculatus (Smith): 4,500 feet.
**Rhacophorus colletti* Boulenger: 4,500 feet.
**Philautus bimaculatus* (Peters): 5,500 feet.

Rhacophorus baluensis, n. sp.

Holotype.—U.S.N.M. no. 130215 from Bundu Tuhan, Mount Kina Balu, North Borneo. An adult female, collected on July 5, 1951, at 4,500 feet by Dr. D. H. Johnson.

Description of holotype.—Habitus moderately robust; head as long as broad; snout pointed, projecting, much longer than eye diameter; nostrils much closer to tip of snout than to eye, directly above end of lower jaw; canthus rostralis sharp, the angle continuous beyond nostril to tip of snout; lores slightly oblique, feebly concave; interorbital a little wider than upper eyelid; tympanum flattened above, about three-fifths diameter of eye, less than its own diameter from orbit.

Fingers with large disks, those of outer fingers greater than tympanum; ventral surface of disks completely circumscribed by groove; web reaching base of disk of fourth finger, reaching disk on outer side of third finger, reaching subarticular tubercle on inner side of third finger, base of disk on outer side of second finger, distal edge of subarticular tubercle on inner side of second finger, and same point on first finger; subarticular tubercles well-developed.

Disks of toes smaller than those of outer fingers; all toes except fourth webbed to base of disks, fourth to distal edge of distal subarticular tubercle; an oval inner but no outer metatarsal tubercle; subarticular tubercles well-developed.

Skin above smooth; a horizontal fold from eye over tympanum to just beyond shoulder; chin

and throat rugose; abdomen and ventral surface of thighs coarsely granular; outer edge of forearm and fourth finger with a conspicuous smooth-edged ridge of skin; a similar ridge along outer edge of tarsus and fifth toe; a long, pointed dermal flap on the heel; a transverse ridge above vent, several conspicuous tubercles below vent.

Color (in alcohol) light grayish brown above with irregular darker markings on the back; canthal ridge light; sides dark gray with small, irregular, white spots; ventrally whitish; throat with a few very small dark spots; ventral surface of hind limbs peppered with dark dots; dorsal surface of limbs cross-barred; posterior surface of thighs dark gray; transverse ridge above anus white edged with black; tubercles below anus white.

Snout to vent 61 mm.

Paratypes.—U.S.N.M. nos. 130216–17, from the type locality.

These agree with the holotype in all details save coloration. Both paratypes have about twelve narrow dark bars across the head and back. The white spots of the sides are more abundant than in the holotype, and in one (130216 similar markings are scattered over the posterior surface of the thigh.

U.S.N.M. 130217 is a male with a grayish nuptial pad on the dorsomedian surface of the first finger. Slitlike vocal sac openings are present along the sides of the floor of the mouth. Snout to vent is 54 mm.

U.S.N.M. 130216 is an adult female; snout to vent is 64 mm.

Remarks.—This species most closely resembles *R. javanus* Boettger. The dermal appendages at the heel and over the vent are identical in the two forms. Though a ridge of skin occurs along the outer edges of the forearm and tarsus of *javanus*, these ridges are apparently less well developed than in *baluensis*. The webbing of the hand is more extensive in *baluensis*, that of *javanus* failing to reach the disks of the outer fingers and present only at the base between the inner fingers. The snout of *javanus* is blunt or rounded and only feebly projecting instead of pointed and strongly projecting as in *baluensis*.

Of the Bornean forms of *Rhacophorus*, *baluensis* resembles *fasciatus* Boulenger (type locality Akar River, Sarawak) and *shelfordi* Boulenger (type locality, Mount Penrissen, Sarawak). Neither of these, however, has a pointed dermal appendage at the heel or a distinct ridge of skin on the tarsus. Furthermore the nostril is equidistant from the tip of the snout and the orbit in the species described by Boulenger instead of much nearer the tip of the snout as in *baluensis*.

Rhacophorus spiculatus (Smith)

Though referred to the genus *Philautus* by Smith (op. cit.), the extensive webbing and the presence of well-developed vomerine teeth suggest closer relationship to *Rhacophorus*. The conical tubercles of the limbs and infra-anal region recall *Rhacophorus everetti* of Palawan although the latter species has no tubercles on the dorsal surfaces of head and body.

MALACOLOGY.—*The weight relations between shell and soft tissues during the growth of some fresh-water snails.* M. O. NOLAN and THEODOR VON BRAND,[1] National Microbiological Institute,[2] Bethesda, Md.

According to Thompson (1917), Nomura (1927), and Huxley (1932), the shell growth of snails is amenable to mathematical analysis. The shell of such snails as the Planorbidae can be considered as a logarithmic spiral, and its growth can be expressed adequately by the customary equation for allometric growth. So far no attempt seems to have been made to study whether fixed relationships exist between the amounts of shell material and soft tissues during the growth of snails. Such information, however, is of importance because physiological studies often involve a comparison in rates of certain processes, such as respiration, between various species or individuals of one species. Since the shell, though probably not entirely inert metabolically (von Brand, 1931; von Brand, Nolan, and Mann, 1948), certainly contributes at most a small fraction of the over-all metabolism, the quantitative weight relationships between shell and soft tissues assume a certain importance.

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[2] Laboratory of Tropical Diseases.